

DSA

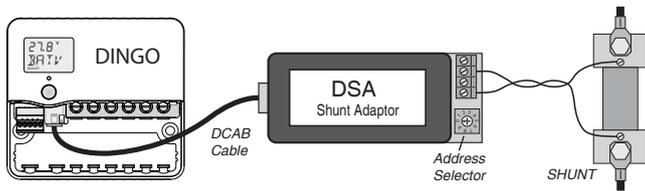
EXTERNAL SHUNT ADAPTOR

The DSA shunt adaptor is designed for use with Dingo series solar charge controllers. It allows the controller to measure charge or load currents which do not go through the controller. This allows inverter or generator currents to be included in the controller's display. The Amp hour reading and State-of-Charge screen will not be meaningful unless all the currents in the system are accounted for.

Description

The DSA shunt adaptor measures the current in a current shunt and converts that measurement into a digital form. This data is then sent to the Dingo controller. On the Dingo screen, the current read by the adaptor is added to the internal current. Each adaptor current can also be seen separately by a long push on CHRG or LOAD.

The DSA shunt adaptor is bi-directional. It can report net load current or net charge current from a single shunt. (Use address 8 or 9). Up to four DSAs can be used together in one system (Use address 1-4).



Installation

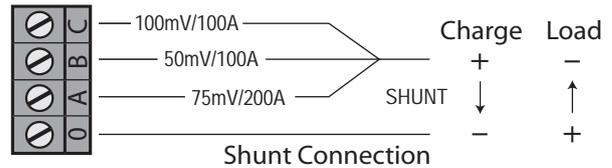
Mount the DSA as close to the shunt as practical. (Preferably within 100mm/4") Twist the two wires to the shunt around each other to reduce the pick up of interference. The shunt may be installed in either a positive or a negative wire.

The DSA shunt adaptor is supplied in a clip together powder coated aluminium box. The base of the box has two 5.5mm diameter mounting holes spaced 50mm apart. The part containing the circuit board clips onto this base. It can be mounted in any attitude. The box is 75L x 38W x 30H mm.

Shunt selection

Three shunt sizes can be handled directly. These are 100mV/100A, 50mV/100A and 75mV/200A.

To connect to a 100mV/100A shunt, connect one wire to the terminal labelled 0 and the other to the terminal marked C. Similarly, use 0 and B for 50mV/100A, or 0 and A for 75/200. Other sizes can be handled by the use of a resistive divider.



Specifications

Range	+/- 255A in 0.1A steps
Accuracy	+/-1% or 1 digit
Shunt Sizes	1mΩ, 0.5mΩ and 0.375mΩ
DC Isolation	500V
Temperature	-20 to +70°C (-4 to +158°F)
Supply Current	4.3mA (from Dingo supply)

The shunt should be arranged so that the end connected to the "0" terminal is more positive for load information and more negative for charge information. If you get this wrong, there will be no damage, simply swap the wires to the shunt.

Address selection

Each DSA in a system must have a different address. This selection is made using the rotary switch beside the green terminal block. Each DSA **must** be set to a different number. Use Table 1 "DSA Addressing" to choose which number is appropriate. The version number of your DSA can be found with the serial number on the back of the circuit board on the DSA. Clip the DSA off the base to find these numbers.

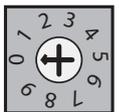


Table 1 DSA Addressing (Rotary Switch)

Address:	Function:	Comment:
1	Shows as shunt 1	Current in one direction counts Ah up. Current in the other direction counts Ah down (through zero). Ah values above zero show as <i>Charge</i> accumulated. Ah values below zero show as <i>Load</i> accumulated.
2	Shows as shunt 2	
3	Shows as shunt 3	
4	Shows as shunt 4	
5,6,7	Reserved	
8	Shows as shunt 3 and 4 (Version 9x and above)	Shunt 3 Ah shows accumulation for <i>positive</i> current Shunt 4 Ah shows accumulation for <i>negative</i> current
9	Shows as shunt 1 and 2 (Version 9x and above)	Shunt 1 Ah shows accumulation for <i>positive</i> current Shunt 2 Ah shows accumulation for <i>negative</i> current
0	Reserved	

NOTE: Changes to the DSA address rotary switch can take up to 20 seconds to be recognised by the Dingo.

Dingo Connection

Use a Plasmatronics DCAB cable to connect a Dingo controller to a DSA shunt adaptor. Use a double adaptor to connect multiple DSA shunt adaptors in a chain. The Dingo, DSA and other accessories can be connected in any order.

